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# Connected Youth

## *Young Students' Extensibility and Use of the Internet to Search for Information*

Ståle Angen Rye

### Abstract

The present article investigates how young people use the Internet to gain information about distant events that can be used in their schoolwork. The aim is to better understand the process behind youngsters' construction of what is distant, which in turn may help us to understand how people construct knowledge and act in relation to such realities. Empirical sources originate from qualitative interviews and observations of Norwegian secondary school students using computers to search for information about tropical rainforests and climate change. A network approach has been used to frame this topic, in which extensibility and flow are the main analytical perspectives. The findings reveal that students tend to not connect directly to distant sources when looking for information about distant realities. Rather, they relate to the global flow of information by using national nodes of information flow that indirectly relate them to what is happening at a distance.

**Keywords:** Internet, media, youth, education, information, globalisation

### Introduction

Easily accessible networks produce a broad set of changes to our concept of space, linking specific locales to a global continuum, and transforming our sense of proximity and distance (Lam 2006; Varnelis & Friedberg 2008). Leander (2010) suggests that this also applies to young people's efforts to understand their surroundings; in the words of Janelle (1973), being a youngster entails becoming more extensible. Today, at an early age and in many different ways, most young people come into contact with what they find to be strange, different, and unknown, not only in their neighbourhood but also elsewhere around the globe (Sefton-Green 2006). Communication and transportation technologies have thus opened a window of opportunity through which young people can reach out and make new connections with new people and places (Valentine & Holloway 2001, 2002); this is what Hägerstrand (1985) calls a 'space of possibilities'. In such spaces, young people can find resources that may be used for identity construction (Lam 2006), for playing (Sefton-Green 2006), and for involvement and participation in politics (Calenda & Mosca 2007; Goldfinch, Gault, & Herbison 2009; Vromen 2007).

To explore how young people reach out to the global flow of information, the present article will focus on how young people use the Internet to gain information about and an understanding of distant events that can be used in their schoolwork. By understanding

how young people in the network society connect to distant realities for educational purposes, we may better understand the process behind youngsters' construction of what is distant, which in turn may help us understand how people construct knowledge and act in relation to such realities. Moreover, if – as is often supposed – the Internet is a useful tool for young students hoping to understand their distant surroundings, it is useful to try to elucidate how they make connections to these realities. In this respect, considerable research has been carried out on young students' use of Internet searches for educational purposes (for an overview see Kupier, Volman, & Trewel 2005). However, despite wide recognition of the Internet as a space-transcending technology (Hanson 2000; Urry 2004), few studies to date have considered the geographical dimension. Accordingly, the issue of the new time-space experiences will be examined here by asking: *How do young students connect to distant realities when using the Internet for schoolwork?* To this extent, the intention of the present study is to identify how young students navigate the Internet, and what influences their navigation. Note, however, that knowledge construction as such is not the focal point for the article, but rather the Internet search. Yet such searching, together with several other factors, is important for how students produce knowledge on what is distant.

The next section outlines a network approach with which to frame the research question, in which extensibility and flow are the main analytical perspectives. Subsequently, the extensibility of young students is discussed with reference to evidence from a study of Internet use for schoolwork by Norwegian secondary school students who were studying social subjects.

## **Growing up in a Network Society**

Young people's increased extensibility, as Janelle (1973) suggests, may be identified by their ability to overcome the friction of distance through communication and transportation, and thus to experience new realities and new connections to people in distant places (Adams 1995). Thrift (1985, 1986) argues that extensibility is a way for people to acquire knowledge and open up new horizons in situations where people are seen as social actors. It is about young people gaining experiences from new realities. According to Adams (2005), this change in society has led to individuals' experiencing distance in new ways, and he regards the recent developments in communication and transportation technology as evidence of a 'shrinking world'. Accordingly, most young students today are facing a spatial reality that is totally different from that of just a short time ago, and as shown by Holloway and Valentine (2000, 2001), children's experiences of and in space have changed dramatically.

This shift in young people's experience of space can largely be explained by the recent rapid increase in Internet access and use among young people. Today, this access is ubiquitous in most developing countries (Wellam & Haythornthwaite 2002; Lenhart, Arafeh, Smith, & Macgill 2008; Thulin & Vilhelmson 2005; Warschauer & Matuchniak 2010). By accessing the Internet at school, at home, or in public places, young people can connect to sources of new experiences that were unimaginable a few years ago (Buckingham 2003; Edwards & Usher 2008; Leander, Philips & Taylor 2010). For those growing up in high-income countries, it is implicit that the infrastructure be in place and that young people have the technical capacity to connect to almost every part of the

world without having to travel at all (Lenhart, et al. 2008; Thulin & Vilhelmson 2006). In contrast, for young people in medium-income and low-income countries, opportunities for Internet access are more unevenly distributed. However, various forms of Internet connections are becoming increasingly accessible in these countries too (Wellam & Haythornthwaite 2002). The situation summarized above reflects how the world's young people to a large extent are connected to what Castells (1996, 2009) describes as the global network of information flows.

For Castells, the network society contains a set of interconnected nodes constituted by persons, institutors, or objects. In this sense, networks are not purely social networks. Rather, several scholars argue that the convergence of social development and information technologies has created a new material basis for social relations, and the networks are hybrid organizations in which humans' activities and actions are affected by machines, software, and various objects (Collon 1987; Latour 1987, 2005; Urry 2004). In this regard, it should be noted that even though networks are often considered a form of horizontal integration, where information floats around more or less freely, networks also contain power that is constituted through the properties of the nodes.

The nodes in the network can enable and constrain the flow of information (Castells 2009). According to Latour (1987, 2005), such nodes have the capacity to impose the translation of information moving around in the network. Castells (2009) suggests that the most powerful nodes are 'switchers', akin to gatekeepers, which are able to connect distinct networks. These switchers include, for instance, CNN, Google, and Apple. Such nodes have the capacity to determine what kind of information is floating, where, and in what format. According to Urry (2004), this is what makes Web networks different from what he calls egalitarian social networks based on face-to-face encounters. Most individuals know more or less the same number of people. In contrast, in the Web a few nodes can process an enormous number of links, and these nodes constitute dominant hubs throughout the Web system (Buchanan 2002; Watt 2003). Urry (2004) calls this the 'aristocratic web', which indicates a web of hierarchical networks.

For young people, their engagement in the networks implies that even if they can escape the control of the adults in close proximity to them when using the Internet, they will find themselves in the domain of powerful nodes such as search engines, news agencies, and software producers. As Ng and Gunstone (2002) observe, the Internet allows students some degree of freedom. Nonetheless, this freedom seems to be limited by the powers they encounter on the Internet. Students are not exposed to such powers as directly as when a teacher exercises control in a classroom, thus these powers are not as readily apparent.

Another noteworthy characteristic of the network society is that although networks in many ways reduce the importance of distance, and are flexible in space, each node is actually always present in a physical place, even if the node moves around (Castells 1996, 2009; Harvey 1996; Lash & Urry 1994; Urry 2010). For example, as a node in a network, a computer will be connected to structural processes in physical space. This is also true for mobile technologies. Thus, network access is always dependent on power and control of space. However, although such networks create social structures that are global in scale, most human experiences are still local in scale (Castells 2009; Norris 2001). Leander et al. (2010), in their extensive literature review, similarly conclude that

young people's learning lives are still located, positioned, and emplaced in relations of power, politics, and culture.

Accordingly, the locations of young people, in and through what they learn, are not isolated from the outside world, but rather are characterized by a multitude of connections to various networks enabled by the new media. Hence, Leander et al. (2010) suggest that the historical understanding of the classroom as a container for learning should be replaced by a view of the classroom as an unsettled and dynamic place that is a point along a complex learning trajectory, a node in the network. In this view, the networks connect the classroom and the students to global information resources and enable the students to stay in contact with people at a distant place.

The classroom, thus, becomes a translocal space, which transcends the borders that traditionally have identified the classroom. A new space of learning may appear. As Martin (2011) argues, the new media enable students to act as global citizens and to develop a cosmopolitan identity, including a global responsibility. Nonetheless, as argued by Olausson (2011), although digitalization allows for a greater extent of cross-boarder flow of news, the media do not necessarily produce global knowledge among individuals. Media news remains largely national. Accordingly, despite the fact that several authors, such as Dealtry (2007), have demonstrated how the new media allow global citizenship to emerge, the question remains largely open as to whether most people will develop a cosmopolitan attitude towards consumption of news.

In the following paragraphs, this notion of the global classroom will be addressed by exploring how young students move around in global networks in order to acquire information for their schoolwork.

## **Current Study**

The empirical data used in the discussion below originate from a study of how Norwegian high school students used the Internet and how they talked about their Internet use for studying social issues and as part of their civic engagement. The sources analysed comprise interviews with twenty-nine students: thirteen girls and sixteen boys aged 16-18. They were interviewed, at their school, in ten focus groups of two to four students each.

The interviews were structured using an interview guide that was organized around three topics: Internet use, social engagement, and social subjects at school. After a short introduction, the students were asked to work as if they were preparing a school assignment about tropical rainforests and global climate change, using their own or the interviewer's laptop. These searches were used as a frame of reference for the latter part of the interviews. The students were also asked to explain how they were operating the computer while searching for information. Most of the focus group sessions took just over an hour.

For pragmatic reasons, informants were chosen from a single county in Norway, but within this geographical area a strategic selection of informants was applied in order to achieve maximum variation in terms of gender, computer experience, and level of skills in social subjects. The selection was made by the students' teachers. Even though the selection of informants was to some extent pragmatic, the variation among the students in terms of the selection criteria was good.

The interviews were recorded, transcribed, and translated into English. The interviewer also made notes about how the students acted while searching, for instance how

they operated the computers. In the following account, the observations of students' actions and the research comments on these actions are indicated in parentheses and numbered as excerpts. The analysis of the interviews focuses on how the students talked about their use of Internet and how they actually used the computer. The excerpts from the interviews discussed below illustrate common patterns in the informants' actions and reflections during the interviews. The interviews were also observations of actions initiated by the researchers, so they can be considered a type of active participant observation.

The strength of this research design is that, in the interview situation, the students could talk about and reflect over their Internet use at the same time as their actual use could be observed. It is thus possible to observe how intentions and reflections relate to action. We could question, however, whether the students' Internet use during the interview situation reflects how they used Internet in their daily life. To minimize such a possible weakness, the students were frequently asked during the interview about how they used the Internet in their daily schoolwork, and how they compared their Internet use in the interview situation to ordinary use. Accordingly, the main empirical source is not the Internet use in the interview as such, but as much how the students talk about this use.

## Looking for Information on the Internet

This section explores how the young students navigated the Internet, and how they explained their movements when searching for information about tropical rainforests and climate change. Based on analysis of the interviews and the observations, the following presentation is organized under three main headings, reflecting how the young students positioned themselves in relation to the global digital flow of information and how they became a part of the digital information structures that Castells (2009) claims constitute the backbone of the network society.

### *Traveling with Google*

The analysis begins with an excerpt from an interview during which three students were asked by the interviewer to demonstrate what they would do if they had to find information about tropical rainforests and climate change as part of a school project. They responded as follows:

- 1 (They go directly onto google.no)
- 2 Fredrik: What was it we were going to look for?
- 3 Interviewer: Tropical rainforest and ...
- 4 (interrupted by Fredrik)
- 5 Fredrik: Write 'tropical rainforest.'
- 6 Christian: But it was tropical rainforest and ...?
- 7 Interviewer: Climate change.
- 8 Christian: Then we just have to write down those two: tropical rainforest and climate change. Click and find a text that ...
- 9 (They look down the list that appears on the screen and click on a link to Wikipedia.no)

- 10 Adrian: Then we go to the Wikipedia article. If we want a lot more information, we scroll down, maybe to the part that's written in English.
- 11 (They continue to search the list onscreen and end up at the English version of Wikipedia.)
- 12 Adrian: [...] Then we have all we need, most often.

It is interesting to note that the students went directly to Google's search engine google.no when looking for information (excerpt 1). This was also true of all the other focus groups interviewed. They all started the search by entering the word 'rainforest' directly, sometimes together with the search terms 'tropical' and/or 'climate change'; and then a list of potentially relevant websites appeared onscreen shortly afterwards (excerpt 9). Usually, the national edition of Wikipedia appeared at the top of the Google list, followed by pages from national news agencies and national NGOs working on rainforest-related issues. The order of appearance varied, however, depending on the combination of search terms entered.

As in the excerpt above, it is noteworthy that none of the students made any attempt to explore the given topic before searching on the Internet. The students' clarifications in the interactions above (2-8) relate only to identifying the exact term given by the interviewer, and do not include any evaluation of the subject they were to find information about. Accordingly, it may be observed, as Kupier et al. (2005) suggest, that students' search processes do not appear to be particularly advanced. They typically do not elaborate much on how they should search. Rather, the students interviewed showed great trust in google.no, and they ceded responsibility for the basic evaluation of the websites they might choose to use to this search engine. This is demonstrated in an interview where a list of results provided by google.no is under discussion:

- 13 (The students are sitting at the computer, trawling through the results generated by the search engine, google.no.)
- 14 Interviewer: Do you always click on the first hit?
- 15 Nicolas: Yes, it's the best.
- 16 Fredrik: regnskog.no seems very good. It seems serious and it came up first.
- 17 Interviewer: Why is it serious?
- 18 Nicolas: It seems professional.
- 19 Adrian: I believe that it is a government site, so it must be good. Then it's objective.

This example illustrates the students' perception that a position at the top of the list of search results was in itself an indication of relevance, without any further elaboration (excerpts 14-16). This demonstrates the hybrid character of networks, where non-human bodies, like a search engine, have the power to act and appear as what Latour (1987) describes as an actant. It was Google and its algorithm that largely determine how the students did connect to the digital flow of information, and it is interesting to note how the students let this powerful node, or switcher in the terminology of Castells (2009), decide what kind of information they should access.

Still, as the excerpt above also shows, when the students had passed the first step of their search processes and had a list of results in front of them, after checking out the top result, they added their own criteria for evaluating the information found by google.no (excerpts 16-19). Their evaluation mainly concerned which of the ten or twenty top results should be chosen, if the first result did not appear to yield sufficient information. This kind of appraisal typically occurred when the students felt they could not use Wikipedia due to an instruction from the teacher.

### *In Search of Easy Accessible and Trustable Facts*

To further explore how the students joined the Google network in order to comply with the requirements set by the teacher and the school system, we will now further examine how the students evaluated the list of results provided by google.no. By doing so, we will see how the students' Internet search is related to how the school network connects to the outside world. The excerpt below is from an interview when the students were asked to comment on the list of websites generated by google.no after they had conducted a search using the term 'rainforest':

- 20 Nora: Then we have to find a page that we believe is trustworthy. [...] not just someone who has reached the conclusions themselves.
- 21 Heidi: And we have to check whether it's what we are looking for. There are some things that aren't [relevant]  
[...]
- 22 Nora: We have to look at lots of pages before we find that out [...].
- 23 Interviewer: How would you decide which of these you would follow up?
- 24 Joachim: We have to click on the link and briefly look at what's there ...
- 25 Heidi: One has to check to some extent, because what typically comes up first is Wikipedia. [Wikipedia] is good for finding out a few facts and concepts that one can then follow up in more depth.
- 26 Nora: After a while, we go on to Greenpeace and sites like that.

In this interview, Nora used the term 'trustworthy' (excerpt 20) as an essential criterion when describing and selecting which sources of information from the Google list of results she found to be relevant for her schoolwork. We have already seen how Fredrik used the term 'serious' (excerpt 16) to indicate potentially useful sources of information, and Adrian used the term 'objective' (excerpt 19) for the same purpose. All of these terms were typically associated with what several of the students called 'facts,' as Heidi did (excerpt 25). These terms appeared to serve as the students' main criteria when selecting from the list of sites provided by google.no.

To further interrogate the students' understanding of 'facts', the following excerpt shows how they appraised the subjective character of information sources. We start by looking at an extract from an interview at a moment when the quality of different sources of information was being discussed, with reference to the list of results provided by google.no:



- 27 Christian: I see that Dagbladet is here, but I don't really want to look at that. I don't really want to look at Bloggsport either.
- 28 Interviewer: Why not Dagbladet?
- 29 (They click on the link.)
- 30 Fredrik: Here [...].
- 31 Adrian: A news article. There is probably only a very small amount of general information and facts.
- 32 Interviewer: Why isn't the blog interesting?
- 33 (They click on the link.)
- 34 Adrian: It's by an angry woman.
- 35 Christian: A tree hugger's blog ...there are too many emotions.

From the above excerpt, it can be seen that when the messenger was directly involved in the message, the students considered the situation problematic, as the messenger reduced the quality of information in at least two ways. First, according to the students, the messenger may lack the capacity to represent facts properly. For example, Fredrik and Adrian dismissed news articles as a reliable source of information due to their limited trust in journalists' ability to present facts (excerpt 31). Similarly, several students questioned Wikipedia as an information source, usually with reference to the advice of their teachers, because of the possibility of '*unskilled persons producing the content*' (however, they commonly use it in their school work). Second, the students perceived that some information was less reliable because it was influenced by the messengers' own interests and personal engagement (excerpt 32-35). This argument was used frequently, and it was applied to many different sources, not just to blogs. For example, some students claimed that NGO websites were difficult to use, as these organizations' own interests often coloured the facts that they presented. In contrast, other students claimed that NGOs were trustworthy because they were '*seeking the truth and had no reason for manipulation*'. Thus, both news agencies and NGOs were seen as fact-reporting institutions by some students, while others perceived them as presenting specific worldviews.

The students' emphasis on 'hard facts' may be understood in light of the observations by Jones (2002) and Hirsh (1999), who both suggest that young students tend to search the Web for simple answers. The students saw the facts as something they just could grab and use in their assignment with only a few changes. They perceived people and institutions on the Web only as messengers carrying information, the content of which was independent of those carrying it. These messengers could connect them to facts or they could blur and reduce the quality by adding their own interest or through their incompetence in handling the facts. This also illustrates how the students, by assigning trust to some nodes, also opened up access to the school-based network. For example, as argued by Castells (2009), every node in a network has power, and so do the students. The students network power can in this regard be related to how they decided what information that should flow into the school system. Google gained access to the school through the students' Internet use. Accordingly, in Latours (1989) terminology, other actors, like news agencies, had to make an association with google.on. This demonstrates how all actors in a network depend on each other and how no one has total control of the information flow (Castels 2009).



*The Importance of Virtual Proximity*

Another noteworthy observation about the students' search for information is that although the students were well equipped, and apparently had the technical knowledge necessary to connect to sources of information located anywhere in the world, they usually ended up with material accessed from only a few Internet sites located in their own national context. This finding is interesting, as Norway is a country with a small population, less than five million, and it is located very far from any tropical rainforests. Partly, this seems to be due to the students' trust in results provided by Google, which mainly included Norwegian pages. Still, it is interesting to examine why the students did not use the search engine in more creative ways, so that their search covered a wider range of information sources. To explore this, we will look at a situation when the students were challenged by the interviewer to search for information located outside their national context.

- 36 Interviewer: So far you only have Norwegian pages, [but] if you want to find pages outside Norway, where would you start?
- 37 Joachim: Then one searches in English.
- 38 Interviewer: Try and see what happens.
- 39 (Joachim begins to search, but then stops and looks at the interviewer)
- 40 Joachim: 'Rain forest'? Is that right?
- 41 Heidi: Yes.
- 42 Joachim: Yes, here it is in English.
- 43 (Wikipedia appears at the top.)
- 44 Interviewer: Apart from Wikipedia, what else may be relevant?
- 45 Joachim: Well ... here there is a travel agency, and yes ... loads of different sites.
- 46 (They spend some time searching.)
- 47 Joachim ... If I know of a page, then I search just by entering 'UN' or something like that.
- 48 (Joachim types 'UN' and 'rainforest' in the search box and presses 'Enter'.)
- 49 Joachim: Now it's coming up ... Yes. No. ... Besides, it wasn't [the right page].
- 50 we (Joachim gives up trying to find the current page.)
- 51 Interviewer: So where will you find pages on tropical rainforests that are not in Norwegian?
- 52 Heidi: If one doesn't want to use Wikipedia?
- 53 Interviewer: Yes.
- 54 Heidi I think that international organizations and the UN are good places to start.
- 55 Interviewer: Which organizations?
- 56 Heidi: Greenpeace and the World Wildlife Fund.
- 57 Interviewer: Norwegian or foreign [language sites]?
- 58 Heidi: Both ... perhaps mainly the Norwegian ones.

Kupier et al. (2005) conclude from their literature review that young students have real difficulties identifying where to find relevant information on the Web. We see an example of this in the extract above when the students are searching for distant sources of information about tropical rainforests and climate change that might be of relevance for their schoolwork (excerpts 36-50). Despite using English search terms, they tended to prefer websites from Norwegian institutions, although usually sites with global connections (excerpts 54-58). Their main international source tended to be the English version of Wikipedia (excerpts 51-55). Accordingly, the cosmopolite nature of the students' Internet activity seems to be limited.

The limited use of distant sources, however, may make sense in terms of the students' main purpose in searching on the Web, which was to look for easily accessible and trustworthy facts. In this regard, it is interesting to note that their main reason for using English sources was, in the words of one student, that *'More people use English. Accordingly, there are more facts available in English'*. Thus, as also stated by Adrian (in excerpt 10-12), if the Norwegian version of Wikipedia did not provide sufficient information for the students' purposes, they could consider going to the English version to gain a more complete picture. In most situations, however, they perceived that they acquired sufficient facts from the national webpage (excerpt 10), so consequently they rarely felt they had any reason to leave the national domain.

To further explore why the students did not seem to use many sources of information located outside their national context, they were challenged in the interviews to look for information that originated in a specific location far removed from their daily life, a place where people can directly experience tropical rainforests: Indonesia:

- 59 Interviewer: Is it interesting to look at information that comes from countries such as Indonesia?
- 60 Nora: Yes, I think so.
- 61 Interviewer: What do you think of such information?
- 62 (There is a pause while the students study the list generated by google.no.)
- 63 Nora: Well actually, typically, none of the sources come directly from Indonesia. Rather there are some [sources], [by] someone who has been there. In a way, [they have] gone to Indonesia, and somehow pretended to experience how it is, how the people who live there have experienced climate changes.

This excerpt shows that the students recognized the value of gaining access to information from a source with a proximate location to the origin of the information, which in this case was the tropical rainforest in Indonesia (excerpts 59-60). Interestingly, from the students' perspective, this did not necessarily entail looking up sources located close to rainforests. Rather, they chose to rely on what they perceived to be trustworthy actors who were able to deliver accounts of first-hand experience (excerpt 63). Hence, they connected via google.no with messengers who they trusted, such as a journalist or an NGO activist. It is noteworthy, however, that what was common to all of the messengers that the students found trustworthy is that they are Norwegians who had experienced the distant realities that the students were seeking information about, including tropical rainforests (excerpt 63).

The students considered it easier to find information within sources with which they were already familiar. In their opinion, there was no point in spending time searching for the same material in unfamiliar places on the Internet. Such an approach to Internet-based information implies that facts are facts wherever they are found, whether close by or in distant sources, but some facts are easily accessible while some are more difficult to access. In this way, space and distance were not perceived to be important for the quality of the facts as such, only for their accessibility. Hence, as argued by Varnelis and Friedber (2008), although digital networks transform our sense of proximity, the national domain remains important for how we consider sources of information (Olausson 2011)

### *Distrust of Distant Sources*

On some occasions, however, the students recognized that the location of information sources was important for the extent to which information appeared to be trustworthy. This is exemplified in an interview when a student was challenged to search for information originating from Indonesia:

- 64 Interviewer: What if you want to know how Indonesians view tropical rainforests?
- 65 Heidi: Then you find it, you know ... there are a lot of facts about how it affects the people who live there, how it influences their way of life and culture, and so on. And those who work [closely] with it would rather see with their own eyes.
- 66 Interviewer: But then there are still some who report from [Indonesia].
- 67 Heidi: I don't exactly know about Indonesian websites. We generally go after known information. I could never manage to pick out which sites are trustworthy if they were from Indonesia. Then, I just don't know.

The above excerpt shows how Heidi appraised the quality of the information sources through their proximity relative to her own location (excerpt 65). She also admitted that it was difficult for her to know what was trustworthy when sources of information were located in places that she had little knowledge about (excerpt 67). Some students emphasized that they knew which Norwegian newspapers they could trust. However, they suggested that it was more difficult to evaluate the trustworthiness of, for example, British newspapers, and even more difficult in the case of Indonesian newspapers. Through their emphasis on the distance from the source, such evaluations were made explicitly. The students also explained their lack of trust in distant sources of information in terms of the features of the place where the information was located. This especially related to difficulties in trusting information from developing countries, which is also where most tropical rainforests are located. This can be seen from the way in which Joachim talked about this issue:

- 68 Joachim: For example, when it comes to countries in Africa [...] the governments are often corrupt. And even though [websites] are compiled by the government there is no

guarantee that they are correct. Maybe they want to portray their country in a good light, they only show the positive sides. So even though it may be apparent that specialists have contributed the information, [...], there is no certainty that it is correct.

- 69 Heidi: Greenpeace, on the other hand, is not trying to mislead people. They only want people to take things seriously. They aim to give facts about the rainforest.

Joachim's reasoning implies that most facts from developing countries are distrusted as long as they are not experienced and expressed by westerners, preferably Norwegians (excerpt 68). Interestingly, none of the students mentioned any problems related to Norwegians' representations, translations, and interpretations of what was distant. As already indicated with reference to Heidi's utterance (excerpt 69), the students seemed to believe that they could find persons and institutions on the Internet, preferably Norwegians, that could provide neutral and objective facts about tropical rainforests.

Finally, it is also interesting to note that the students did not necessarily consider foreign languages a major problem. They all claimed to understand English. Further, several also mentioned the use of web-based translation tools as a solution if they did not understand the language in which the information was written. Nonetheless, for these students, language would have been a problem only if they wanted to connect to information from countries using languages other than English, such as Indonesia, Brazil, and the Republic of the Congo.

However, as already mentioned, they did not believe that there was much to be gained from searching for information in these countries, regardless of the language used.

## **Concluding Discussion**

This discussion of Internet search practices shows how a sample of secondary school students tended not to connect directly to distant sources when searching online for information about distant realities. Rather, they preferred to connect to the global flow of information by using powerful nodes in the information networks that indirectly connected them to faraway events. These nodes were often already known and trusted by the students, which indicates that their virtual travel was not a journey into an unknown landscape. They only engaged in virtual travel long enough to find accounts about distant places. This means that they reached out by using the Internet without being directly in touch with the distant. Hence, although Varnelis and Friedberg (2008) and others may be correct in claiming that the new networks create a new sense of proximity by connecting localities on a global scale, the present study indicates that young people's new digital spaces for learning are still largely local or national spaces, even when they use the Internet.

However, it should be noted that although the students' digital space of learning should be considered a form of local space, the digital places they visited when searching for information were formed through the global networks of which local places are a part. Massey (1991), in her famous essay on a global sense of place, describes how places are formed by their global links as well as their local history. The same can be

said about digital places. The present article shows how a digital place (and space) may appear as both local and global in relation to young people moving about on the Internet. An Internet site, such as one belonging to a national news agency, may have a long history embedded in the national consciousness, culture, and identity, yet the site hosting the news may be the product of global links to international news agencies, international correspondents, and distant happenings. In the present study, this combination was seen to be important for the trust that many students exhibited when exploring the content of newspapers' websites.

The discussion above shows how the young people's connections to distant realities are not only made by their increased extensibility through access to communication networks. Although, as suggested by Janelle (1973) and Adams (2005), extensibility is certainly about how people reach out, the empirical data analysed here show how people are being reached when they connect to what Castells (1996) calls the global network of information flow. Hence, to understand students' use of computers and the Internet in the schools as well as what it means to grow up in the network society, one should also take into account the way in which students' Internet use enables different actors on the Internet to reach them while they are engaged in their schoolwork. Typically, when students' use of the Internet to gather information about social issues is discussed in the literature, it is considered a process in which the students are purposeful actors who select the information they want to use. The data analysed in the present article, however, show that this only partly describes how students connect to distant realities. Rather than going out, students open the door and see what is coming in. It is not just a case of the students selecting information; the information is also selecting the students. As Castells (2009) suggests, what is moving in the networks, and what information reaches Internet users, is not incidental.

The above argument shows how young people depend on various switchers and on the structure of communication networks when searching for information and news about distant places. The switchers translate and pass on information about distant realities that apparently are otherwise inaccessible to the students. The most dominant nodes are identified in this article, with reference to Castells (2009) and Urry (2004) as global institutions, such as Google, CNN, and Apple. Interestingly, the students in the present study did not go directly to these switchers. Rather, they connected to the national version or branches of these global bodies. For example, they preferred the national version of Google and Wikipedia, they opted for national news agencies rather than global ones, and they preferred national branches of global NGOs, such as the Norwegian sites of Greenpeace or the World Wildlife Fund (WWF). The main exception here was Regnskogsfondet, a Norwegian-based NGO working in connection with tropical rainforests. The other bodies mentioned represent what Castells (2009) describes as a type of national customizing of the global flow of information. This national character of the sources gave the students a feeling of proximity when collecting facts about distant realities, and they gained a sense of trust that was necessary for them to use the information in their schoolwork.

Interestingly, the apparent inaccessibility of distant realities does not seem to be due to technical barriers limiting the Norwegian students' extensibility. Rather, the students were constrained by their limited capacity to understand and evaluate distant information sources, and hence they mistrusted distant sources. This implies that although such

sources are accessible through the material infrastructure, there are mental and cultural barriers to accessing them. Consequently, much of what flows in global networks is not accessed by students in schools. Although, as Janelle (1973) pointed out many years ago, the world is shrinking as a result of rapid developments in transportation and communication, and the level of global interconnectedness is limited by an individual's point of view.

To provide a physical analogy, although roads and railways exist to connect their home to, say, Vladivostok in eastern Russia, this does not necessarily imply that students have the ability to reach that place. They may not even see the point of going there. Similarly, it has been shown that students did not see any point in going (virtually) to Indonesia to learn about tropical rainforests. They preferred closer virtual destinations. This indicates that the students' lack of motivation for gaining information directly from distant and unknown sources was a major limitation to their information gathering. For the students, the motivational reasoning was simple: Why should they go to distant sources when the best ones were close to them, such as the national version of Wikipedia? Thus, despite the fact that new communication technologies may reduce the friction of distance in terms of accessible infrastructure, the spaces between students and distant realities remain a barrier to connecting with distant people and places.

Altogether the present empirical review demonstrates how the students, through use of the Internet, connected to a wider world. The students, however, did not act as global citizens in terms of interacting and identifying themselves with distant places and people. The students' basic area was national, despite being connected to the global networks. However, as argued by Olausson (2011), the national and global are not mutually exclusive, but may reinforce and reconstruct each other. The students rather use sources on the national arena for getting information from various places in the world. Thus, overall, the present empirical data are in line with Olausson's (2011) argument, which states that national identity functions as a necessary anchoring mechanism in the construction of the other. This means that the students' national orientation when searching for information about distant places does not necessarily imply a contradiction to being global. It is still noteworthy how the students to a very limited degree considered the distant other to be subjects who may have valuable knowledge, experiences and lives that varied from the representation in the national media.

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